

# The DIALECTIC



*Published by* CONTROL LOGIC, INC. SPECIALISTS IN DIGITAL TECHNOLOGY

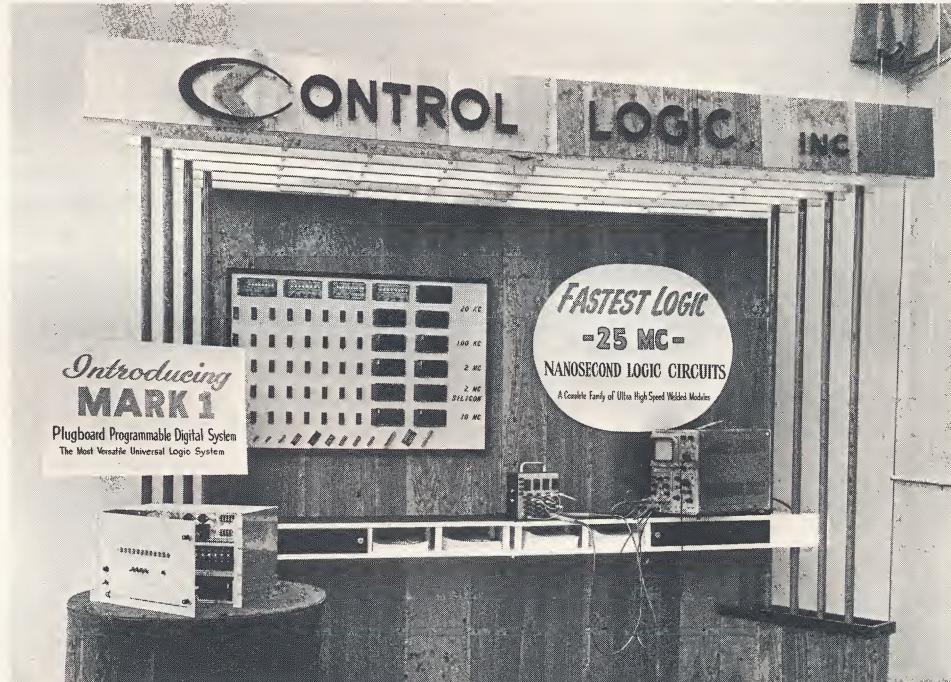
## BOOTH NO. 3043

## IEEE DEMONSTRATION FEATURES

- industry's fastest family of digital circuits--50MC
- most versatile digital programmable plugboard system  
--MARK I

Control Logic booth number 3043, as shown in the accompanying photograph, will have a dynamic exhibit of the company's latest developments. The booth, attractively decorated in the corporate colors, black and red, will have an effective presentation of the new ultra high speed logic circuits which feature assembly techniques utilizing standard packaging methods. This new line is available today in modular form and will shortly be expanded by the addition of a printed circuit card line mounting these modules. Physically, they are the same as the module products shown in the photograph on page two.

The other new product to be presented is the first of the "MARK" series of programmable systems. There will be three altogether in this family of versatile plugboard systems. MARK I will be dynamically demonstrated in the booth with two plugboard programs. The system utilizes a plugboard and contains up to forty logic cards. MARK II and MARK III will each be a larger system with considerably more capability and peripheral equipment. A MARK III system, presently in production, will combine with two analog systems to produce a "HYBRID" computer and will be presented in forthcoming columns with descriptions and photographs.



### DIALECTIC, *the magazine*

This is the first issue of "DIALECTIC" to be published bi-monthly. As with this issue, Dialectic will contain up-to-date information about new products, new literature, and new system developments, applications and deliveries. Anyone desiring to be on the "Dialectic" mailing list should forward a request to the Marketing Department, Control Logic, 3 Strathmore Road, Natick, Massachusetts.

### New Literature Available

First Time  
IEEE Show.

Control Logic will issue a new brochure listing all series of circuit modules from 20 KC through 50 MC at IEEE. It includes 20 photographs and 40 logic drawings. The brochure is available from all representatives and field offices (listed on page four) or by writing or calling Control Logic.

# New Low Cost, Low Frequency, High Reliability, Circuit Family Available in Three Package Styles.

Series DC01 is a family of 0 to 20 KC digital circuit components for INDUSTRIAL CONTROL and LOW SPEED DATA PROCESSING. Low cost and low power keynote these circuits. They have outstanding features for simple, reliable application and long life operation.

Standard circuits perform counting, storage, gating and timing. These are combined with circuits for relay/lamp drive and nixie display and coupling to limit switches, photo cells, and 1 V to 200 V signal sources. The result is a highly flexible and comprehensive family of basic components.

Three different packaging styles are offered, each containing identical circuitry.

Series DC01M - Modules for individual circuit application, prototype usage and special packaging. Each circuit type is a welded, encapsulated module which occupies less than 0.6 cu. in. and weighs less than 1/2 ounce. These are exceptionally rugged components - suitable for high shock and vibration environment.

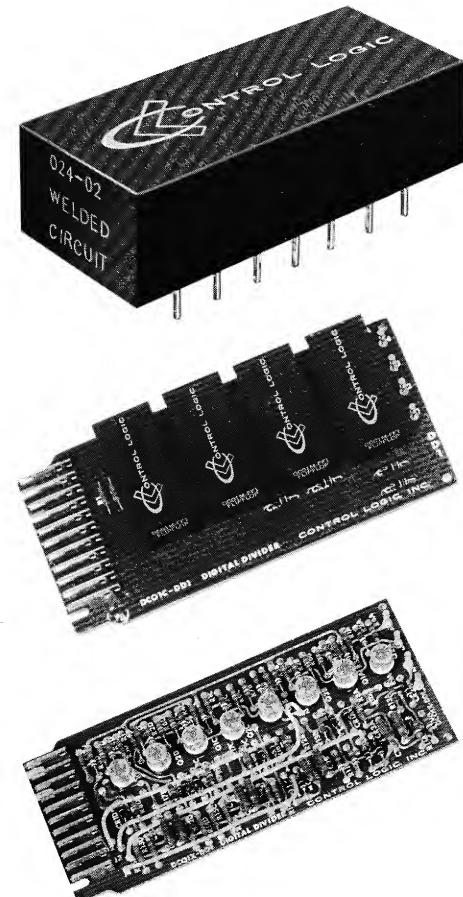
Series DC01C - Cards constructed of modules mounted on a printed circuit mother-board and which are particularly

suited to handle specific equipment and system designs of any size and complexity and for high environment field applications. These may be quickly and economically implemented for each individual application, utilizing standard accessories Series PA1.

Series DC01X - Open circuit cards for laboratory, prototype and other applications not requiring high environmental considerations. They are constructed by mounting all components directly on the printed circuit board. They are identical to Series DC01C electrically and in pin-connections and emphasize economy and application flexibility.

These circuits are simple to apply. They are specified in terms of circuit functions - independent of circuit types and interconnections. Ease of installation and maintenance is facilitated with test points, visual display accessories, and test aids that simplify and speed equipment checkout and maintenance.

Evaluation circuits and MMU4 mounting unit (described on Page Three) are available on consignment, with no obligation. They may be obtained by contacting any field office or representative listed on page four.



## Industry's Fastest Line of Digital Circuits Utilizes Standard Logic Packaging Techniques.

### SERIES DC50

This newly developed line of all welded high reliability modules is an integrated family of digital circuits for very high speed timing, data acquisitions and conversion and arithmetic operations. It features division and clock generation up to 50 MC and gated counting, shifting and code detection to 25 MC (40 ns period).

All gating circuits are direct coupled for pulse/level operation which may be applied as either asynchronous signal transfer or single/multiple phase clocked operation.

NAND gating logic is employed in conjunction with expandable diode-coupled inputs to flipflops and pulse shaping circuits.

All DC50 circuits are packaged in standard Control Logic fifteen pin modules. An outstanding feature of this is its capability to utilize standard Control Logic accessories, Series PA1, in that these circuits do not require special coupling or terminations.

A comprehensive set of system function cards is being added to this line. This includes decade counters, 4 bit comparators, 4 stage shift registers and other standard functions.

### DIALECTIC, *the word*

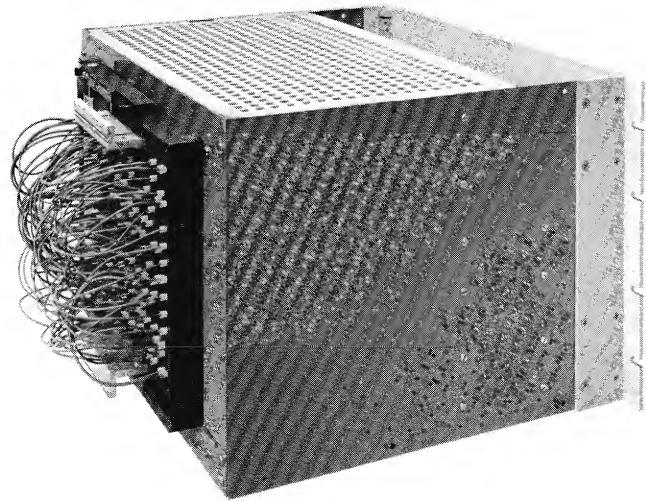
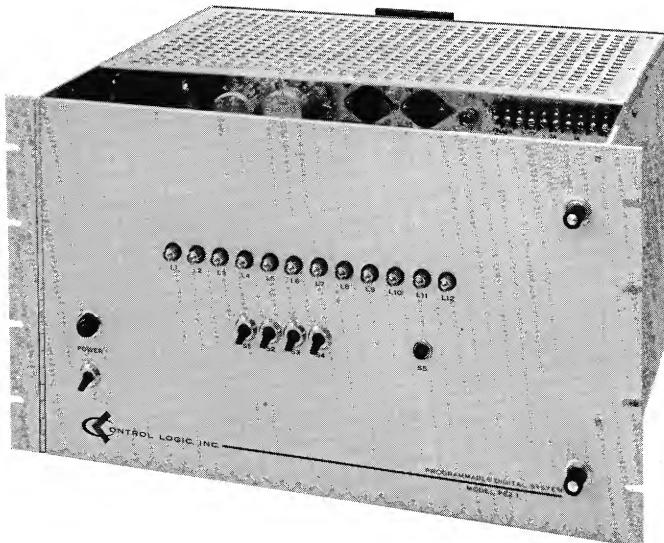
The word "Dialectic", as described in Webster's, has many interrelated meanings, which, when paraphrased, are:

1. a discussion and reasoning by dialogue as a method of intellectual investigation, and
2. any systematic reasoning, exposition or argument or play of ideas.

A study of "Dialectic" indicates two distinct trends of thought. Aristotle and his disciples believed it to be a **negative method of discussing reason based upon experience and probability**. Plato presented "Dialectic" as a **positive method of discussing reason based on absolute physical truths and ideas**.

Therefore, Dialectic can be the philosophical basis, if one can be said to exist, of digital circuitry. **Negative (Aristotle) and positive (Plato) utilization (discussion) of electric pulses (ideas) to seek a solution (truth)**.

# New Plugboard System Added to Control Logic Family of Programmable Digital Equipment.



The "MARK" series of Programmable Digital Systems are universal logic systems utilizing plugboards for programming. They present to the user the capability to instantaneously change the entire program by inserting a different plugboard, change the system or its frequency of operation by replacing any or all of the logic cards, or make minor changes simply by changing the location of a patch-cord.

MARK Systems are used as permanent system installations, in the laboratory for simulation and system design, in production as test equipment, and in the classroom for training. Maximum time and labor economies are realized.

A complete selection of compatible equipments fulfills

additional requirements for peripheral devices, e.g. readouts, A/D-D/A conversion, etc.

MARK I is 10-1/2" high, 17-1/2" deep and mounts in standard 19" racks. The system utilizes a screened plugboard and mounts up to 40 digital cards. Cards may be selected from any series from 20 KC through 2 MC and may be inserted in any card position.

Larger MARK systems are presently in design and will shortly be introduced. MARK I systems are now in production and are available three weeks ARO. These systems are also available on consignment at no obligation. Evaluation and consignment arrangements can be made by any field office or representative listed on page four. Leasing arrangements are also available.

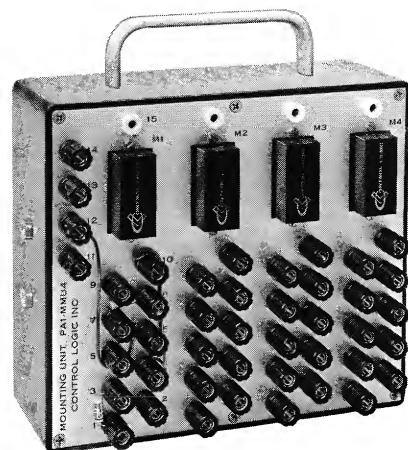
## Control Logic Issues Battery Operated Demonstration Units to all Field Engineers.

All field engineering offices and representatives have now received module test and demonstration unit, Model PA1-MMU4. This new product is a compact portable fixture for test and demonstration of all Control Logic welded, high reliability circuit modules.

It provides four sockets with terminal connections to each socket for applying signal inputs and supply voltages, interconnections and observing signal outputs. The case is black phenolic with a carrying handle. Internal batteries allow portable application of the DC01 module series (see page 2) and external power connections permit operation of all other module series.

A call to any field office or representative (listed on page 4) will receive prompt action for a demonstration at a customer facility or a consignment at no obligation. This includes applicable modules, accessories and an instruction manual.

Note: Within twenty-four hours after MMU4 designation was applied to the demonstrator, employees were calling it the Mau-Mau.



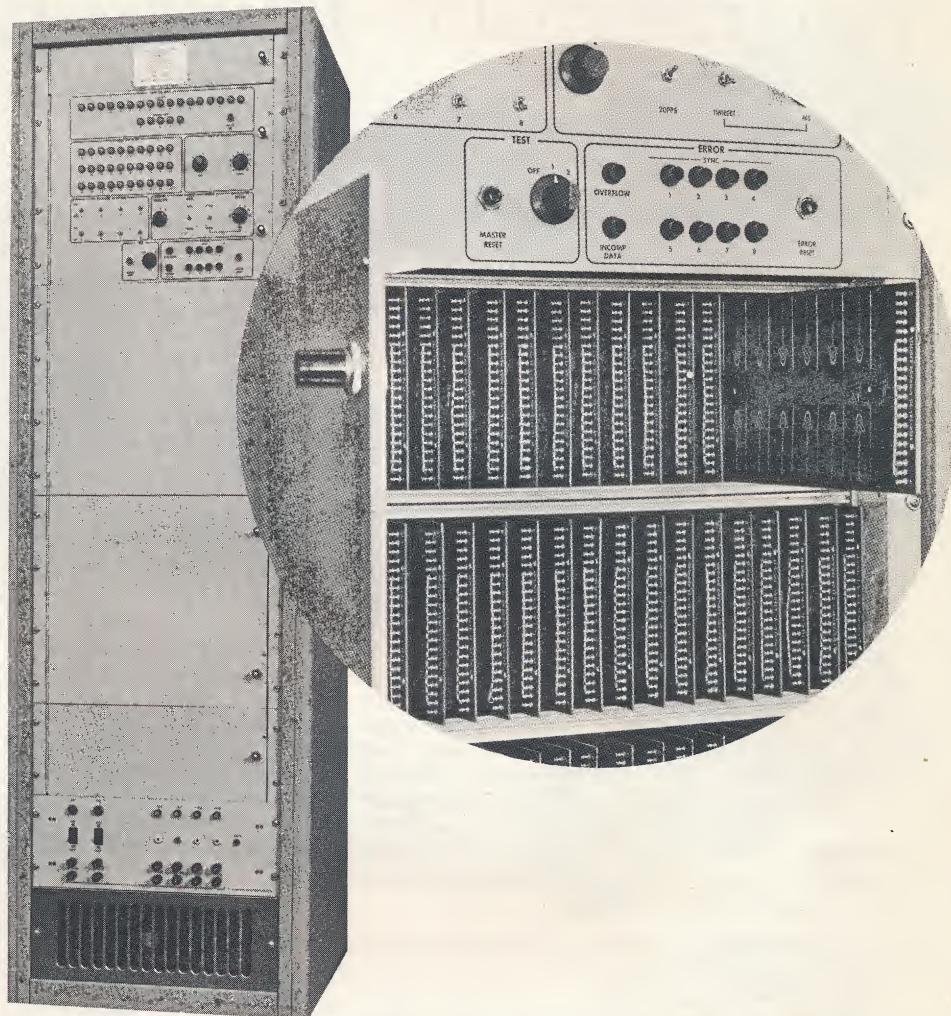
# CONTROL LOGIC SHIPS FOURTH SYSTEM TO PACIFIC MISSILE RANGE.

The fourth "Buffer, Reformatter and Synchronizer" system has been delivered to the U.S. Navy at Point Mugu, California. Exceptional features of these systems are the high reliability and performance obtained through welded circuit modules and the exceptionally dense packaging capable only through use of encapsulated modules.

Each system utilizes approximately 3,000 standard Control Logic welded modules representing over 100,000 components and one quarter million welds. Large printed circuit cards were designed for maximum utilization of both logic and all available cabinet volume. This density is shown in the accompanying pictures.

These systems accumulate asynchronous serial data, simultaneously, from up to 8 Kineplex receivers, rearrange the data format and present it to a digital computer having Navy Tactical Data System Specifications. Formating of output data is accomplished through the use of program plugboards (similar in design, but considerably larger than those used in Control Logic MARK systems described on page three).

Input signals also include IRIG range time decoder which is demodulated, decoded and displayed on the front panel. In addition, the IRIG demodulator internally up-dates time code information and generates timing signals for the remainder of the system.



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